



Peter M. Rooney
Secretary for
Environmental
Protection

Air Resources Board

John D. Dunlap, III, Chairman

9528 Telstar Avenue • P.O. Box 8001 • El Monte, California 91731 • www.arb.ca.gov



Pete Wilson
Governor

Mail Out # MSC-98-05

To: ALL INTERESTED PARTIES

Re: Notice of Workshop Concerning Adoption of Regulations for Spark-Ignition Engines of 25 Horsepower and Greater for Off-Road Equipment

This letter is notification of a public workshop, to be held by the staff of the California Air Resources Board (ARB), concerning the adoption of regulations establishing emission standards and requirements for new spark ignition (SI) engines 25 horsepower and greater for use in certain off-road equipment. The purpose of the workshop is to solicit public comments regarding regulation development and to provide information concerning the staff's current progress and preliminary plans. This workshop will be held at the following time and location:

Tuesday, May 19, 1998
1:30 p.m. to 4:00 p.m.
Annex 4
9530 Telstar Avenue
El Monte, California 91731

In November 1994, the ARB approved the State Implementation Plan (SIP) for ozone which outlines the measures to be taken to bring the state's air quality into attainment with federal ozone standards. During the development of the SIP, it became clear that reducing emissions of oxides of nitrogen (NOx) and reactive organic gases (ROG) from off-road engines and equipment operating within the state is imperative for cleaning California's air. The SIP identified seven primary categories of off-road equipment where significant emission reduction opportunities exist: diesel industrial equipment; SI (primarily gasoline and LPG-fueled) industrial equipment of 25 through 175 horsepower; pleasure craft; marine vessels; locomotives; and aircraft.

This workshop and the related regulatory effort will focus on SIP mobile source measures M11 and M12, which called for controlling emissions from industrial equipment SI engines of 25 through 175 horsepower. The 175 horsepower rating was originally determined to be the upper range for measures M11 and M12 because the majority of engines (and emissions) is below this rating. However, the ARB is considering to expand the regulatory category to include engines greater than 175 horsepower because their emissions contribution is significant, these engines and equipment are very similar to those in the 25 through 175 horsepower range, and they presently are not covered in other regulatory efforts.

California Environmental Protection Agency

Printed on Recycled Paper

The federal Clean Air Act preempts California control of emissions from farm and construction equipment under 175 horsepower. Because of this preemption more than 40% of the emissions from the subject engine category is beyond ARB's authority to regulate. Thus, since only the United States Environmental Protection Agency (U.S. EPA) has authority to control these engines, the ARB staff is working closely with U.S. EPA toward the development of a nationwide federal rule to cover all engines in this category. This federal rule would then serve to regulate emissions from farm and construction equipment in California in the absence of ARB's authority to do so. The federal rule and California regulations will be harmonized as much as possible to minimize any confusion and expenses that could result from significantly different state and federal requirements.

Typical applications for SI engines 25 horsepower and greater include specialty vehicles, forklifts, portable generators, large turf care equipment, irrigation pumps, welders, scrubber/sweepers, air compressors, and a wide array of other agricultural, construction, and general industrial equipment. They often are derived from automobile engines, though they tend to use less sophisticated fuel and emission control systems. ARB staff believe that significant emission reductions can be achieved from these engines simply through the use of common automotive emission control technologies such as exhaust gas recirculation (EGR), closed loop fuel control systems, and three way catalytic converters. The ARB currently has laboratory work underway to demonstrate the effectiveness and feasibility of these approaches.

At the workshop, the ARB staff will present an overview of the prominent regulatory issues as they are currently understood, and some of the options available for addressing those issues. The primary issues are:

Emission standards - ARB staff plans to develop numerical standards for NO_x and Non-Methane Hydrocarbon (NO_x+NMHC) emissions based on what is achievable with automotive derived technologies. Closed loop controls (without catalysts) are anticipated in model year 2001, with three way catalysts to be phased in beginning in 2004.

Two engine categories - Different standards and useful life requirements are necessitated by different characteristics of smaller versus larger engines. Staff anticipates a division between small and large engines at 2 liters for air-cooled engines and 1.4 liters for water-cooled engines.

Test cycle - Staff suggests use of the ISO C2 and D2 cycles, for variable speed or constant speed engines, respectively.

Useful life - For emissions compliance, staff is considering a useful life of 5,000 hours or 7 years for large engines, and 3,000 hours and 5 years for small engines.

Other issues that staff is looking at include emission warranty requirements, emissions liability, production assembly line testing requirements, in-use testing requirements and anti-tampering provisions.

The regulations to be proposed to the Board for its approval, in October of this year, will be based on the most promising of these options, modified as appropriate, to respond to public comments or concerns expressed at the workshop or at other times. The ARB encourages all interested parties to present comments and information on the subject of standards and regulations at this workshop and be prepared to discuss technical issues. Those who are unable to personally participate in the workshop process or who wish to supply additional information are encouraged to submit written comments. Workshop participants who wish to discuss confidential data may schedule individual meetings prior to the workshop or immediately following the workshop. Post-workshop comments will be most useful if they arrive prior to June 1, 1998.

Persons with disabilities who require accommodation are requested to contact Mr. Tom Chang (626) 575-6809, or (800) 700-8326 (Telecommunications Device for the Deaf or TDD), by May 8, 1998.

The public board hearing for this regulatory item has been tentatively set for October 1998. If you have any questions or comments regarding this subject, please contact Ms. Jackie Lourenco, Manager, Off-Road Controls Section, at (626) 575-6676, or by mail at 9528 Telstar Avenue, El Monte, CA 91731, or by e-mail at jlourenc@arb.ca.gov.

Sincerely,

//s//

Robert H. Cross, Chief
Mobile Source Control Division